



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
ENVIRONMENTAL SCIENCE CENTER  
701 MAPES ROAD  
FORT MEADE, MD 20755-5350

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SDMS DocID 2055944

DATE : July 20, 2000

SUBJECT: Region III Data QA Review

FROM : Fredrick Foreman *FF*  
Region III ESAT RPO (3ES20)

TO : William Wentworth  
Regional Program Manager (3HS34)

Attached is the inorganic data validation report for the New Jersey Fireworks site (Case#: R3795) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III ESD.

If you have any questions regarding this review, please call me at  
(410) 305-2629.

Attachment

cc: Alan Fong (MDE)

WA File: 0300402 TDF# 0639

OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

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**DATE:** July 13, 2000

**SUBJECT:** Level IM2 Inorganic Data Validation for DAS R3795  
Site: New Jersey Fireworks

**FROM:**

[Redacted]  
Senior Data Reviewer

[Redacted]  
Senior Oversight Chemist

**TO:** Fredrick Foreman  
ESAT Regional Project Officer

### OVERVIEW

DAS R3795 from the New Jersey Fireworks site consisted of four (4) aqueous and five (5) soil samples submitted to PDP Analytical Services (PDP) for perchlorate analyses. The sample set included one (1) aqueous field duplicate pair and one (1) soil field duplicate pair. Samples were analyzed according to EPA Method 300.0 through the Delivery of Analytical Services (DAS) program.

### SUMMARY

Data were validated according to Region III Modifications to the National Functional Guidelines for Inorganic Data Review, Level IM2. All samples were successfully analyzed for perchlorate. Laboratory reported results are presented on a Data Summary Forms (DSF) in Appendix B.

### MINOR PROBLEM

- The samples, collected 4/20/00 and 4/21/00, were analyzed 5/24/00. The technical holding time of twenty-eight (28) days has been exceeded for all samples by five (5) and six (6) days. Quantitation limits for this analyte may be biased low and have been qualified "UL" on the DSF.

### NOTES

- The DAS request specified EPA Method 314 was to be utilized in analysis of this sample set. This method is specific for perchlorate in drinking water samples. The laboratory substituted EPA Method 300 for these analyses. Both methods utilize similar reagents and equipments.

- No positive results above the reporting limit were reported in any field sample.
- Laboratory Control Samples (LCSs) recoveries were 109% and 85%, respectively, for the aqueous and soil matrices.
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries in the aqueous matrix were outside the upper control limits. No positive results were reported for these samples. No data were qualified based on these outliers.
- Method 300 prescribes extraction of dry soil samples. Quantitation limits were reported by the laboratory to account for sample percent solids. Based on reported quantitation limits, the percent solids were calculated and reported on the DSF by the reviewer.

All data for DAS R3795 were reviewed in accordance with Region III Modifications to the National Functional Guidelines for Inorganic Data Review, April 1993.

#### **ATTACHMENTS**

Appendix A Glossary of Data Qualifier Codes  
Appendix B Data Summary Form  
Appendix C Results Reported on Laboratory Form Is  
Appendix D Supporting Documentation

DCN:R3795.IM2

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## **APPENDIX A**

### **Glossary of Qualifier Codes**

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## GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)

### CODES RELATED TO IDENTIFICATION

(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

### CODES RELATED TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

J = Analyte Present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

[ ] = Analyte present. As values approach the IDL the quantitation may not be accurate.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

### OTHER CODES

Q = No analytical result.

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## **APPENDIX B**

### **Data Summary Forms**

## DATA SUMMARY FORM: INORGANIC

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Case #: R3795

SDG: NONE

Number of Soil Samples: 5

Site:

New Jersey Fireworks

Number of Water Samples: 4

Lab.:

PDP

Sample Number :	R379500	R379501	R379502	R379508	
Sampling Location :	GW-4	GW-5	SW-3	SW-3D	
Field QC			Field Dup. of R379508	Field Dup. of R379502	
Matrix :	Water	Water	Water	Water	
Units :	ug/L	ug/L	ug/L	ug/L	
Date Sampled :	4/20/2000	04/21/2000	4/20/2000	04/20/2000	
Time Sampled :	10:45	10:15	09:45	09:45	
Dilution Factor :	1.0	1.0	1.0	1.0	
ANALYTE	RL	Result	Flag	Result	Flag
Perchlorate	1.0		UL		UL

RL = Reporting Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Sample Number :	R379503	R379504	R379505	R379506	R379507
Sampling Location :	SED-3	S-4	S-6	S-8	S-10
Field QC		Field Dup. of R379507			Field Dup. of R379504
Matrix :	Soil	Soil	Soil	Soil	Soil
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Date Sampled :	4/20/2000	04/21/2000	04/21/2000	04/21/2000	04/21/2000
Time Sampled :	09:45	09:00	09:25	09:40	09:00
Percent Solids:	68.0	88.0	79.0	74.0	91.0
Dilution Factor :	1.0	1.0	1.0	1.0	1.0
ANALYTE	RL	Result	Flag	Result	Flag
Perchlorate	10.0		UL		UL

RL = Reporting Limit

SEE NARRATIVE FOR CODE DEFINITIONS

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## APPENDIX C

Form Is

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## LABORATORY REPORT

## PERCHLORATE BY ION CHROMATOGRAPHY

CLIENT NAME : USEPA, REGION III

PROJECT NUMBER : R3795

PROJECT NAME : SUPERFUND

PRINTED ON : 6/2/2000 9:27

## PARAMETER: Perchlorate

CLIENT SAMPLE ID	R379500	R379501	R379502	R379508
SAMPLE ID	6020.001	6020.002	6020.003	6020.009
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	4/20/00	4/21/00	4/20/00	4/20/00
DATE RECEIVED	4/25/00	4/25/00	4/25/00	4/25/00
METHOD REFERENCE	EPA-300(MOD)	EPA-300(MOD)	EPA-300(MOD)	EPA-300(MOD)
QUANTITATION LIMIT	1	1	1	1
RESULTS	ND	ND	ND	ND
UNITS	UG/L	UG/L	UG/L	UG/L
QUALIFIER				
ANALYST	PRN	PRN	PRN	PRN
DATE ANALYZED	05/24/00	05/24/00	05/24/00	05/24/00
DILUTION	1	1	1	1
INSTRUMENT FILE	0524A161.D11	0524A161.D13	0524A161.D12	0524A161.D14
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	PC04	PC04	PC04	PC04
PRE-PREP BLANK ID				
PREP BLANK ID	PCBLK04	PCBLK04	PCBLK04	PCBLK04
LCS ID	PCLCS04	PCLCS04	PCLCS04	PCLCS04
LCSD ID				
MS ID	6020.001MS	6020.001MS	6020.001MS	6020.001MS
MSD ID	6020.001MSD	6020.001MSD	6020.001MSD	6020.001MSD
DUP ID				

0000005

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**LABORATORY REPORT**

**PERCHLORATE BY ION CHROMATOGRAPHY**

**CLIENT NAME** : USEPA, REGION III  
**PROJECT NAME** : SUPERFUND

**PROJECT NUMBER** : R3795  
**PRINTED ON** : 6/2/2000 9:27

**PARAMETER: Perchlorate**

CLIENT SAMPLE ID	R379500MS	R379500MSD	PREP BLANK	LAB CONTROL SAMP
SAMPLE ID	6020.001MS	6020.001MSD	PCBLK04	PCLCS04
SAMPLE MATRIX	WATER	WATER		
DATE SAMPLED	4/20/00	4/20/00		
DATE RECEIVED	4/25/00	4/25/00		
METHOD REFERENCE	EPA-300(MOD)	EPA-300(MOD)	EPA-300(MOD)	EPA-300(MOD)
QUANTITATION LIMIT	1	1	1	1
RESULTS	41	41	ND	34.8
UNITS	UG/L	UG/L	UG/L	UG/L
QUALIFIER				
ANALYST	PRN	PRN	PRN	PRN
DATE ANALYZED	05/24/00	05/24/00	05/24/00	05/24/00
DILUTION	1	1	1	1
INSTRUMENT FILE	0524A161.D15	0524A161.D16	0524A161.D09	0524A161.D10
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	PC04	PC04	PC04	PC04
PRE-PREP BLANK ID				
PREP BLANK ID	PCBLK04	PCBLK04	PCBLK04	PCBLK04
LCS ID	PCLCS04	PCLCS04		
LCSD ID				
MS ID		6020.001MS		
MSD ID				
DUP ID				

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LABORATORY REPORT

PERCHLORATE BY ION CHROMATOGRAPHY

CLIENT NAME : USEPA, REGION III

PROJECT NUMBER : R3795

PROJECT NAME : SUPERFUND

PRINTED ON : 6/2/2000 9:27

PARAMETER: Perchlorate

CLIENT SAMPLE ID	R379503	R379504	R379505	R379506
SAMPLE ID	6020.004	6020.005	6020.006	6020.007
SAMPLE MATRIX	SOIL	SOIL	SOIL	SOIL
DATE SAMPLED	4/20/00	4/21/00	4/21/00	4/21/00
DATE RECEIVED	4/25/00	4/25/00	4/25/00	4/25/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	14.6	11.4	12.6	13.5
RESULTS	ND	ND	ND	ND
UNITS	UG/KG	UG/KG	UG/KG	UG/KG
QUALIFIER				
ANALYST	PRN	PRN	PRN	PRN
DATE ANALYZED	05/24/00	05/24/00	05/24/00	05/24/00
DATE PREPPED	05/24/00	05/24/00	05/24/00	05/24/00
DILUTION	1	1	1	1
EXTRACT VOLUME	10 ML	10 ML	10 ML	10 ML
INSTRUMENT FILE	0524A161.D20	0524A161.D23	0524A161.D24	0524A161.D25
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
PREP ANALYST	PRN	PRN	PRN	PRN
SAMPLE AMOUNT	10 G	10 G	10 G	10 G
QC BATCH ID	PC05	PC05	PC05	PC05
PRE-PREP BLANK ID				
PREP BLANK ID	PCBLK05	PCBLK05	PCBLK05	PCBLK05
LCS ID	PCLCS05	PCLCS05	PCLCS05	PCLCS05
LCSD ID				
MS ID	6020.004MS	6020.004MS	6020.004MS	6020.004MS
MSD ID	6020.004MSD	6020.004MSD	6020.004MSD	6020.004MSD
DUP ID				

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**LABORATORY REPORT**

**PERCHLORATE BY ION CHROMATOGRAPHY**

<b>CLIENT NAME</b> : USEPA, REGION III	<b>PROJECT NUMBER</b> : R3795
<b>PROJECT NAME</b> : SUPERFUND	<b>PRINTED ON</b> : 6/2/2000 9:27

**PARAMETER: Perchlorate**

CLIENT SAMPLE ID	R379507	R379503MS1	R379503MSD1	PREP BLANK
SAMPLE ID	6020.008	6020.004MS	6020.004MSD	PCBLK05
SAMPLE MATRIX	SOIL	SOIL	SOIL	
DATE SAMPLED	4/21/00	4/20/00	4/20/00	
DATE RECEIVED	4/25/00	4/25/00	4/25/00	
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	10.9	14.6	14.6	10
RESULTS	ND	56.6	63.8	ND
UNITS	UG/KG	UG/KG	UG/KG	UG/KG
QUALIFIER				
ANALYST	PRN	PRN	PRN	PRN
DATE ANALYZED	05/24/00	05/24/00	05/24/00	05/24/00
DATE PREPPED	05/24/00	05/24/00	05/24/00	05/24/00
DILUTION	1	1	1	1
EXTRACT VOLUME	10 ML	10 ML	10 ML	10 ML
INSTRUMENT FILE	0524A161.D26	0524A161.D21	0524A161.D22	0524A161.D18
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
PREP ANALYST	PRN	PRN	PRN	PRN
SAMPLE AMOUNT	10 G	10 G	10 G	10 G
QC BATCH ID	PC05	PC05	PC05	PC05
PRE-PREP BLANK ID				
PREP BLANK ID	PCBLK05	PCBLK05	PCBLK05	PCBLK05
LCS ID	PCLCS05	PCLCS05	PCLCS05	
LCSD ID				
MS ID	6020.004MS		6020.004MS	
MSD ID	6020.004MSD			
DUP ID				

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**LABORATORY REPORT**

**PERCHLORATE BY ION CHROMATOGRAPHY**

**CLIENT NAME** : USEPA, REGION III  
**PROJECT NAME** : SUPERFUND

**PROJECT NUMBER** : R3795  
**PRINTED ON** : 6/2/2000 9:27

**PARAMETER: Perchlorate**

CLIENT SAMPLE ID	LAB CONTROL SAMP			
SAMPLE ID	PCLCS05			
SAMPLE MATRIX				
DATE SAMPLED				
DATE RECEIVED				
METHOD REFERENCE	EPA-300			
QUANTITATION LIMIT	10			
RESULTS	42.4			
UNITS	UG/KG			
QUALIFIER				
ANALYST	PRN			
DATE ANALYZED	05/24/00			
DATE PREPPED	05/24/00			
DILUTION	1			
EXTRACT VOLUME	10 ML			
INSTRUMENT FILE	0524A161.D19			
INSTRUMENT ID	A-DIONEX300			
PREP ANALYST	PRN			
SAMPLE AMOUNT	10 G			
QC BATCH ID	PC05			
PRE-PREP BLANK ID				
PREP BLANK ID	PCBLK05			
LCS ID				
LCSD ID				
MS ID				
MSD ID				
DUP ID				

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**APPENDIX D**  
**Support Documentation**

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**PDP Analytical Services**

1680 Lake Front Circle Drive, Suite B The Woodlands, TX 77380

Phone: (281) 363-2233 Fax: (281) 298-5784

Episode No: 6020

Client: EPA Region III

Project: R3795

**CASE NARRATIVE**



**Sample Receipt and Login**

PDP Analytical Services received one (1) shipment, delivered by client on 04/25/00. The four (4) aqueous and five (5) soil samples was scheduled for a fourteen (14) day turn-around-time

No login discrepancies were found during login.

**Sample Analysis Narrative**

**Perchlorates**

The samples were prepared and analyzed on 05/24/00. No target compounds were detected in the samples.

The water matrix spike and matrix spike duplicate had high recoveries. Since the samples had no target detections, and all other quality control samples met the required limits, no action was taken.

All soil quality control samples met all requirement. No problems were encountered in the analysis of these samples.

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**MS/MSD SUMMARY REPORT**

PERCHLORATE BY ION CHROMATOGRAPHY			
CLIENT NAME : USEPA, REGION III	DATE RECEIVED : 4/25/00		
PROJECT NAME : SUPERFUND	PRINTED ON : 6/6/2000	19:19	
PROJECT NUMBER : R3795			
SAMPLE MATRIX : WATER	METHOD REFERENCE : EPA-300(MOD)		
SAMPLE	MATRIX SPIKE	MATRIX SPIKE DUPLICATE	
SAMPLE ID : 6020.001	MS SAMPLE ID : 6020.001MS	MSD SAMPLE ID : 6020.001MSD	
CLIENT SAMPLE ID : R379500	CLIENT SAMPLE ID : R379500MS	CLIENT SAMPLE ID : R379500MSD	
DATE ANALYZED : 05/24/00	DATE ANALYZED : 05/24/00	DATE ANALYZED : 05/24/00	
INSTRUMENT FILE : 0524A161.D11	INSTRUMENT FILE : 0524A161.D15	INSTRUMENT FILE : 0524A161.D16	

PARAMETER	UNITS	MS SPIKE ADDED	MSD SPIKE ADDED	SAMPL CONC.	MS CONC.	MSD CONC.	MS RECOVERY (%)	MSD RECOVERY (%)	RPD	QC LIMIT
Perchlorate	UG/L	32.0	32.0	0	41.4	41.0	129 *	128 *	0.8	80 - 120

\* Indicate values outside of QC limits

RPD : 0 out of 1 outside limits

Spike Recovery : 2 out of 2 outside limits

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LCS/LCSD SUMMARY REPORT

PERCHLORATE BY ION CHROMATOGRAPHY

CLIENT NAME :	DATE RECEIVED :
PROJECT NAME :	PRINTED ON : 6/6/2000 19:18
PROJECT NUMBER :	
SAMPLE MATRIX : LIQUID	METHOD REFERENCE : EPA-300(MOD)
LAB CONTROL SAMPLE	LAB CONTROL SAMPLE DUPLICATE
LCS SAMPLE ID : PCLCS04	LCSD SAMPLE ID :
CLIENT SAMPLE ID :	CLIENT SAMPLE ID :
DATE ANALYZED : 05/24/00	DATE ANALYZED :
INSTRUMENT FILE : 0524A161.D10	INSTRUMENT FILE :

PARAMETER	UNIT	LCS TRUE VALUE	LCSD TRUE VALUE	LCS FOUND VALUE	LCSD FOUN VALUE	LCS RECOVER (%)	LCSD RECOVERY (%)	RPD	RPD LIMIT	QC L RE
Perchlorate	UG/L	32.0		34.8		109			20	80 - 120

\* Indicate values outside of QC limits

RPD : 0 out of 0 outside limits

Spike Recovery : 0 out of 1 outside limits

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**LCS/LCSD SUMMARY REPORT**

**PERCHLORATE BY ION CHROMATOGRAPHY**

CLIENT NAME :	DATE RECEIVED :
PROJECT NAME :	PRINTED ON : 6/6/2000 19:22
PROJECT NUMBER :	

SAMPLE MATRIX : SOLID	METHOD REFERENCE : EPA-300
LAB CONTROL SAMPLE	LAB CONTROL SAMPLE DUPLICATE
LCS SAMPLE ID : PCLCS05	LCSD SAMPLE ID :
CLIENT SAMPLE ID :	CLIENT SAMPLE ID :
DATE ANALYZED : 05/24/00	DATE ANALYZED :
INSTRUMENT FILE : 0524A161.D19	INSTRUMENT FILE :

PARAMETER	UNIT	LCS TRUE VALUE	LCSD TRUE VALUE	LCS FOUND VALUE	LCSD FOUN VALUE	LCS RECOVER (%)	LCSD RECOVERY (%)	RPD	RPD LIMIT	QC LIMIT REC.
Perchlorate	UG/KG	50.0		42.4		85			20	2 - 100

\* Indicate values outside of QC limits

RPD : 0 out of 0 outside limits  
Spike Recovery : 0 out of 1 outside limits

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MS/MSD SUMMARY REPORT

PERCHLORATE BY ION CHROMATOGRAPHY											
CLIENT NAME : USEPA, REGION III						DATE RECEIVED : 4/25/00					
PROJECT NAME : SUPERFUND						PRINTED ON : 6/6/2000 19:22					
PROJECT NUMBER : R3795											
SAMPLE MATRIX : SOIL						METHOD REFERENCE : EPA-300					
SAMPLE				MATRIX SPIKE				MATRIX SPIKE DUPLICATE			
SAMPLE ID : 6020.004				MS SAMPLE ID : 6020.004MS				MSD SAMPLE ID : 6020.004MSD			
CLIENT SAMPLE ID : R379503				CLIENT SAMPLE ID : R379503MS1				CLIENT SAMPLE ID : R379503MSD1			
DATE ANALYZED : 05/24/00				DATE ANALYZED : 05/24/00				DATE ANALYZED : 05/24/00			
INSTRUMENT FILE : 0524A161.D20				INSTRUMENT FILE : 0524A161.D21				INSTRUMENT FILE : 0524A161.D22			
PARAMETER	UNITS	MS SPIKE ADDED	MSD SPIKE ADDED	SAMPL CONC.	MS CONC.	MSD CONC.	MS RECOVERY (%)	MSD RECOVERY (%)	RPD	RPD LIMIT	QC L REC.
Perchlorate	UG/KG	73.2	73.2	0	56.6	63.8	77	87	12.2	20	2 - 100

\* Indicate values outside of QC limits

RPD : 0 out of 1 outside limits

Spike Recovery : 0 out of 2 outside limits

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